

NEW MAIN CLAIM

1. A method for selectively absorbing oxygen from a gaseous mixture, preferably ambient air, into a liquid medium and subsequently releasing the oxygen to provide it in a concentrated form as a reaction partner for combustion or oxidation reactions, using at least one ionic compound being liquid at the respective process temperature as the medium, characterized in that at least one ionic liquid having a reversible and – with regard to other gases, especially nitrogen – selective oxygen-uptake capacity is used as the medium.